

Claims

- [c1] 1.A transmission mechanism of a sheet feeder located inside a body for feeding a document, the transmission mechanism comprising at least:
a plurality of drive rollers;
at least a belt, wherein the belt tightens around the plurality of drive rollers, and the plurality of drive rollers drive the belt;
a idle roller; and
an elastic member, wherein the elastic member activates the idle roller causing the idle roller to exert a force on the belt for moving the document between the idle roller and the belt during feeding of the document.
- [c2] 2.The transmission mechanism in claim 2, wherein the number of drive rollers is three.
- [c3] 3.The transmission mechanism in claim 1, wherein the plurality of drive rollers is arranged in a triangular formation where the drive rollers are located at the corners, the triangular formation is selected from a group including acute triangles, right-angle triangles, and obtuse triangles.

- [c4] 4.The transmission mechanism in claim 1, wherein the belt further comprising a plurality of belts tightened around the plurality of drive rollers.
- [c5] 5.The transmission mechanism in claim 1, wherein at least one of the plurality of drive rollers is driven by a motor to drive all the plurality of rollers.
- [c6] 6.The transmission mechanism in claim 1, wherein the elastic member is a spring.
- [c7] 7.The transmission mechanism in claim 1, wherein the elastic member is manufactured together with the body by injection molding.
- [c8] 8.The transmission mechanism in claim 7, wherein the elastic member is plastic.
- [c9] 9.The transmission mechanism in claim 1, wherein the plurality of drive rollers further comprising a plurality of axles, the axles penetrate a center of the plurality of drive rollers and two ends of the axles are fixed on the body, and the plurality of drive rollers revolve about the axles.
- [c10] 10.The transmission mechanism in claim 1, wherein the idle roller further comprising a shaft, the shaft penetrates a center of the idle roller, and the idle roller re-

volves about the shaft.

[c11] 11.The transmission mechanism in claim 1, wherein one end of the elastic member is fixed on the shaft of the idle roller, and the other end is fixed on the body.

[c12] 12.The transmission mechanism in claim 1, wherein the document is a sheet of paper.

[c13] 13.The transmission mechanism in claim 1, wherein a contact between the belt and the idle roller is a face type contact.

[c14] 14.The transmission mechanism in claim 13, wherein a surface contact friction between the belt and the document is greater than the friction between the idle roller and the document.

[c15] 15.The transmission mechanism in claim 1 further comprising a feed-in roller, a feed-out roller, a feed-in tray, and a feed-out tray, wherein the feed-in roller and feed-out roller are located inside the body, the feed-in tray and feed-out tray are located outside the body, the feed-in roller is located at one side of the feed-in tray, and the feed-out roller is located at one side of the feed-out tray.

[c16] 16.The transmission mechanism in claim 1, wherein an

elasticity of the elastic member moves the idle roller towards the belt in a tangent direction and the document moves through between the idle roller and the belt.